

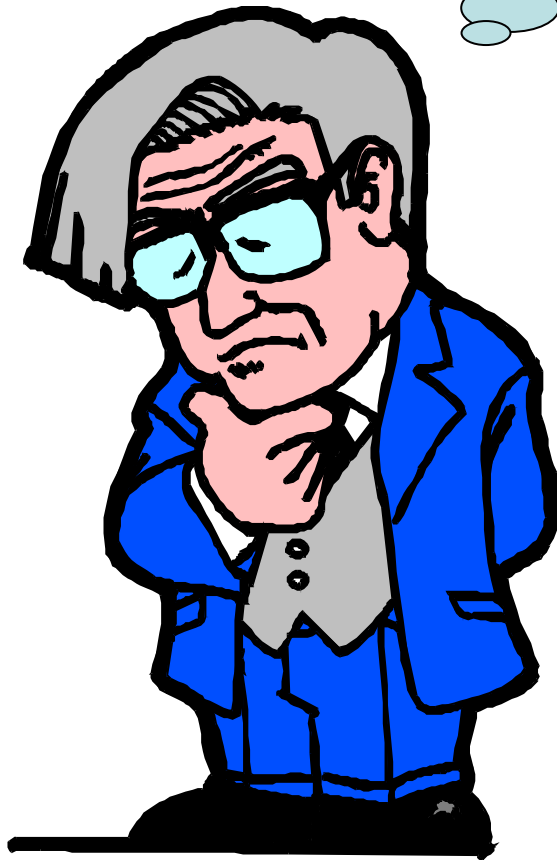
# Policy suggestions for (more and better) DSM

Hans Nilsson

Chairman of the IEA DSM-Programme



What is holding us back?



**Energy Efficiency is not a Product, but a characteristic with a product.**

# The strategy of the IEA DSM Programme

- Vision: *Demand side activities should be **active elements and the first choice** in all energy policy decisions designed to create more reliable and more sustainable energy systems.*
- Mission: *Deliver to its stakeholders, materials that are **readily applicable** for them in crafting and implementing policies and measures.....*

# What is DSM?

- The planning, implementation and monitoring of strategies designed to encourage consumers to improve energy efficiency, reduce energy costs, change the time of use, or use of different energy source(s)
- DSM is in itself a policy to implement strategies that make use of energy and power saving technologies to achieve “large scale energy efficiency”

Measure

Agent

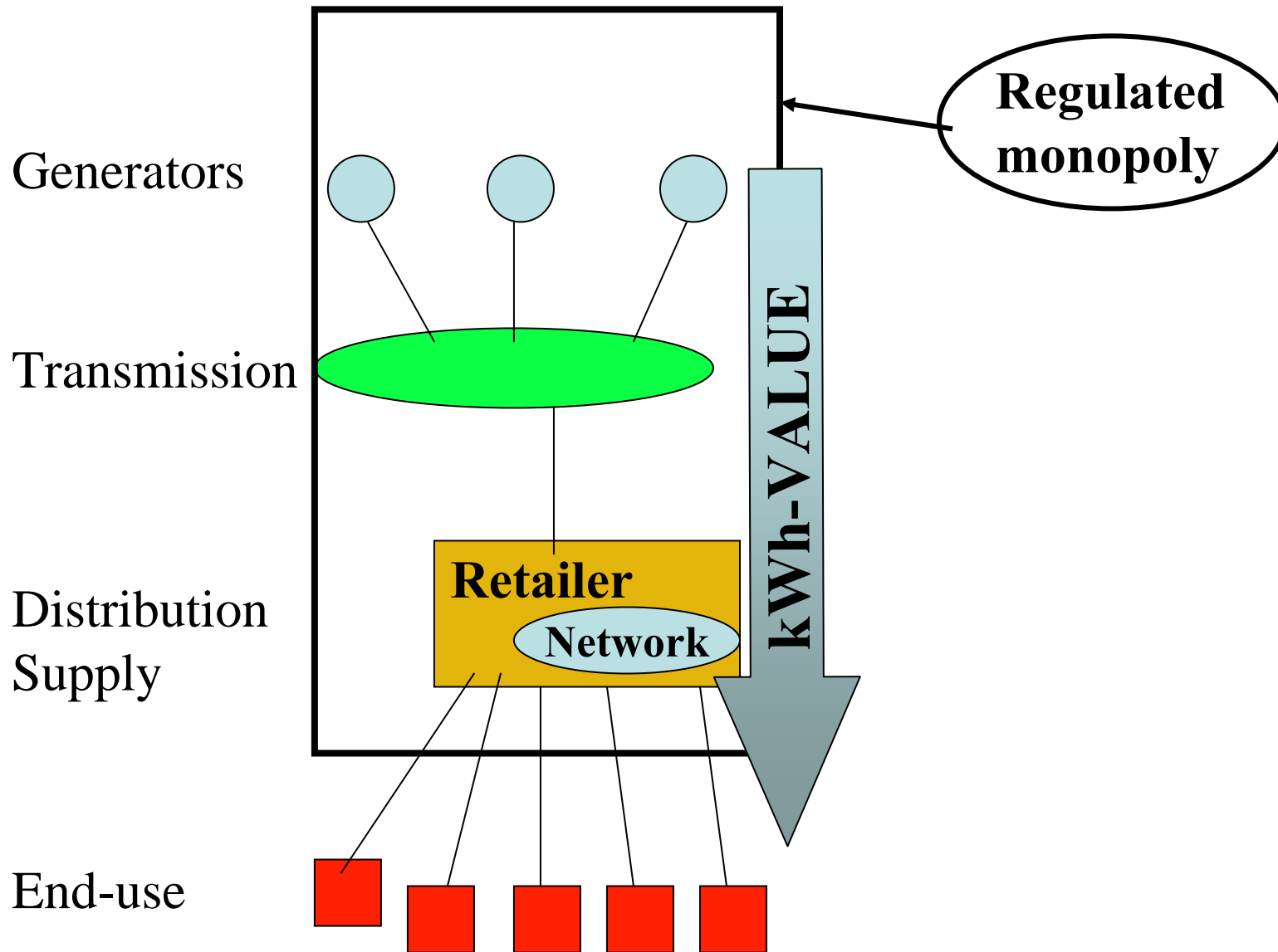
Target  
issues



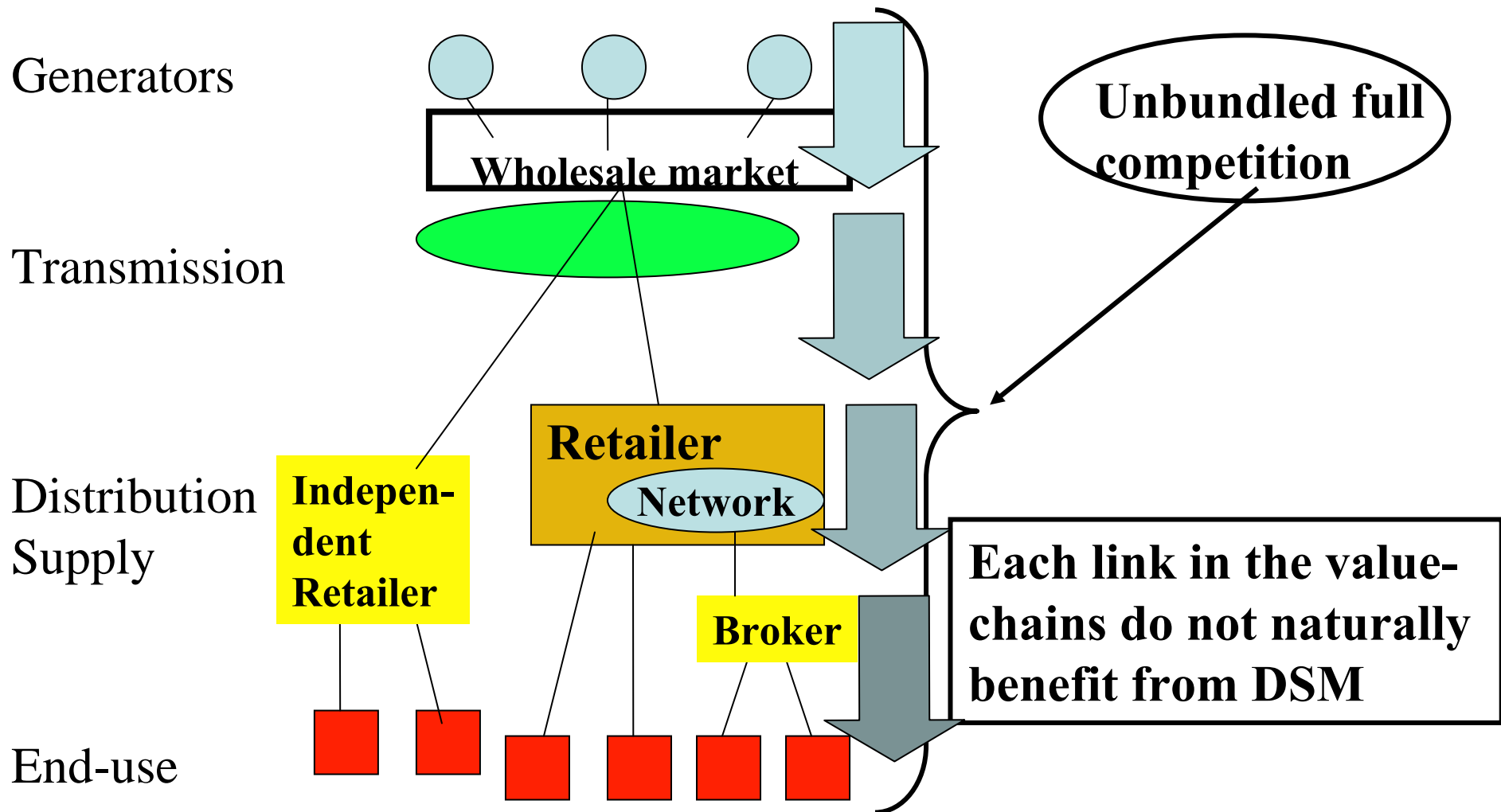
# The problem is several!

- **Load level** (emissions and waste from too much supply to a too high demand)
- **Load shape** (Too high peaks, too little reserve capacity and bottlenecks in transmission)
- **Market responsibilities and market design** (who is the owner of the problem?)

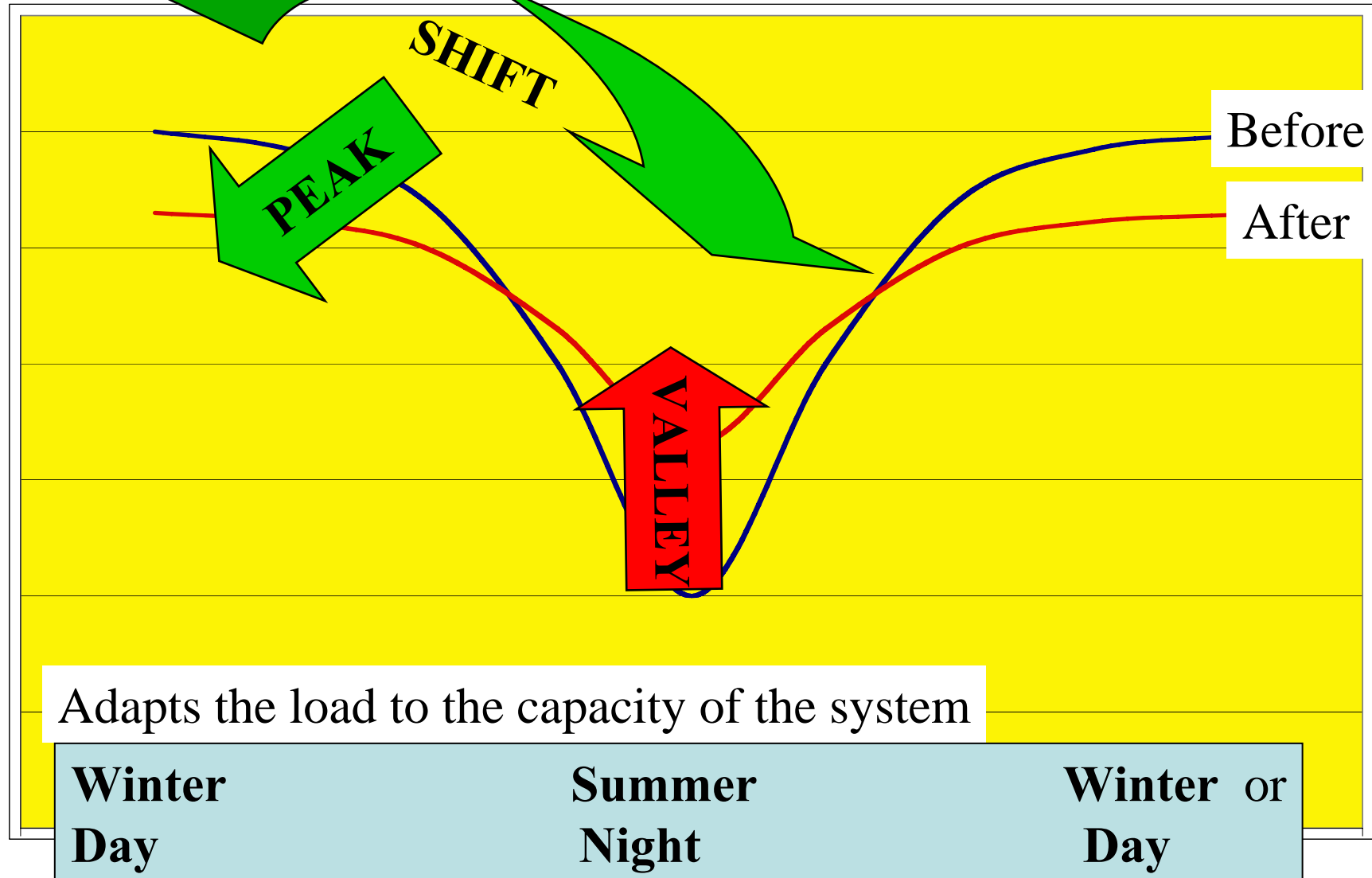
# The value chain used to be vertical..



# ...but with liberalisation the value chain is fragmented



# DSM can Change the LOAD SHAPE





# The DSM work on LOAD SHAPE

## FINALISED

- II. Communication Technologies
- VIII. Demand-Side Bidding in a Competitive Electricity Market

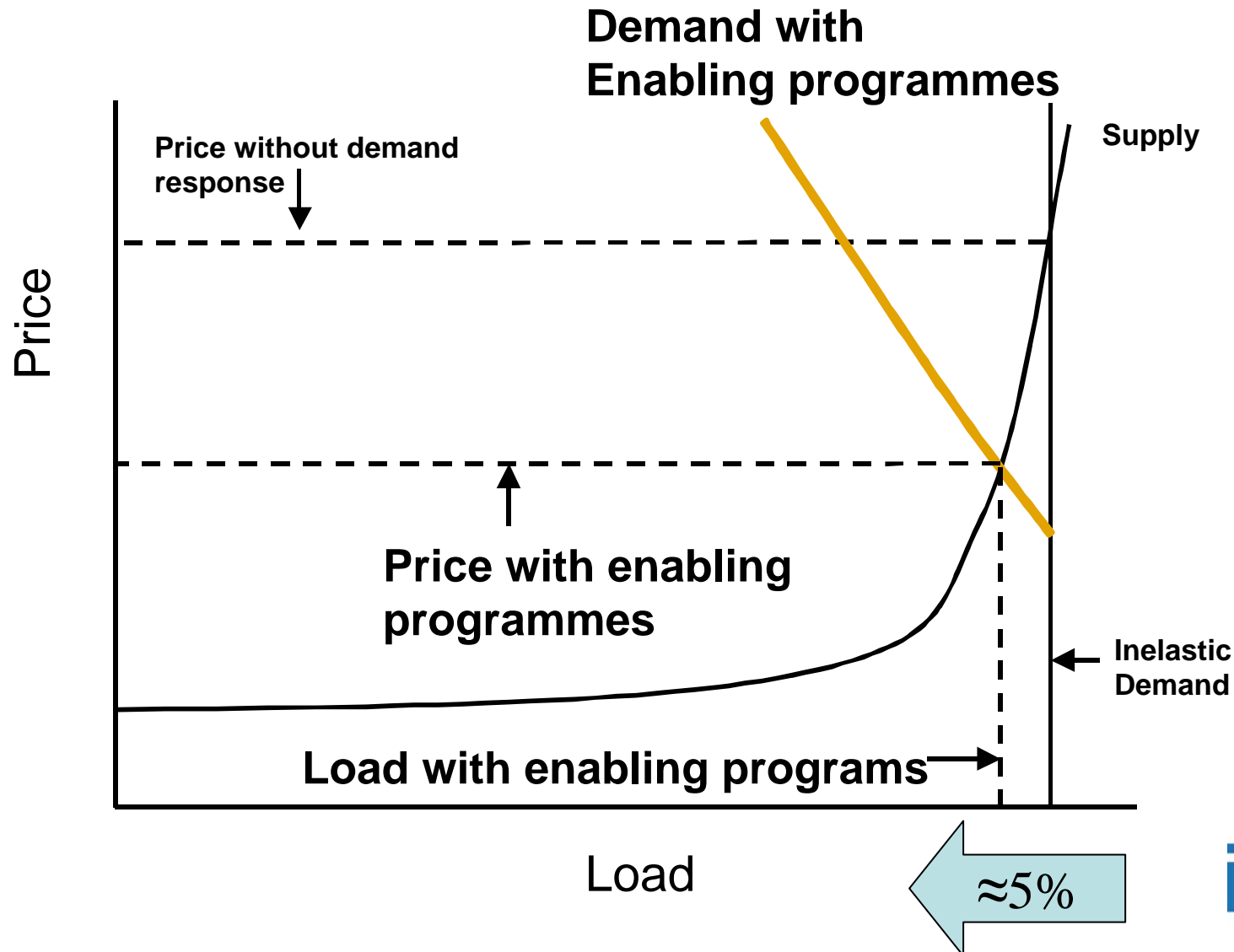
## ACTIVE

- XI. Time of use pricing
- XIII. Demand response Resources, DR
- XV. Network driven DSM

## IN PREPARATION and DISCUSSED

- DRR Valuation and approbation (XIII)
- Integration of DSM, Renewables and Distributed Generation (Firming intermittent renewable with dynamic demand)

# DR and price volatility



# DSM Policy for load shape

- Countries should develop a regulatory regime that appoints responsibility for resource adequacy in the electric systems and, when the regime so allows, makes demand side balancing service the prioritised option.

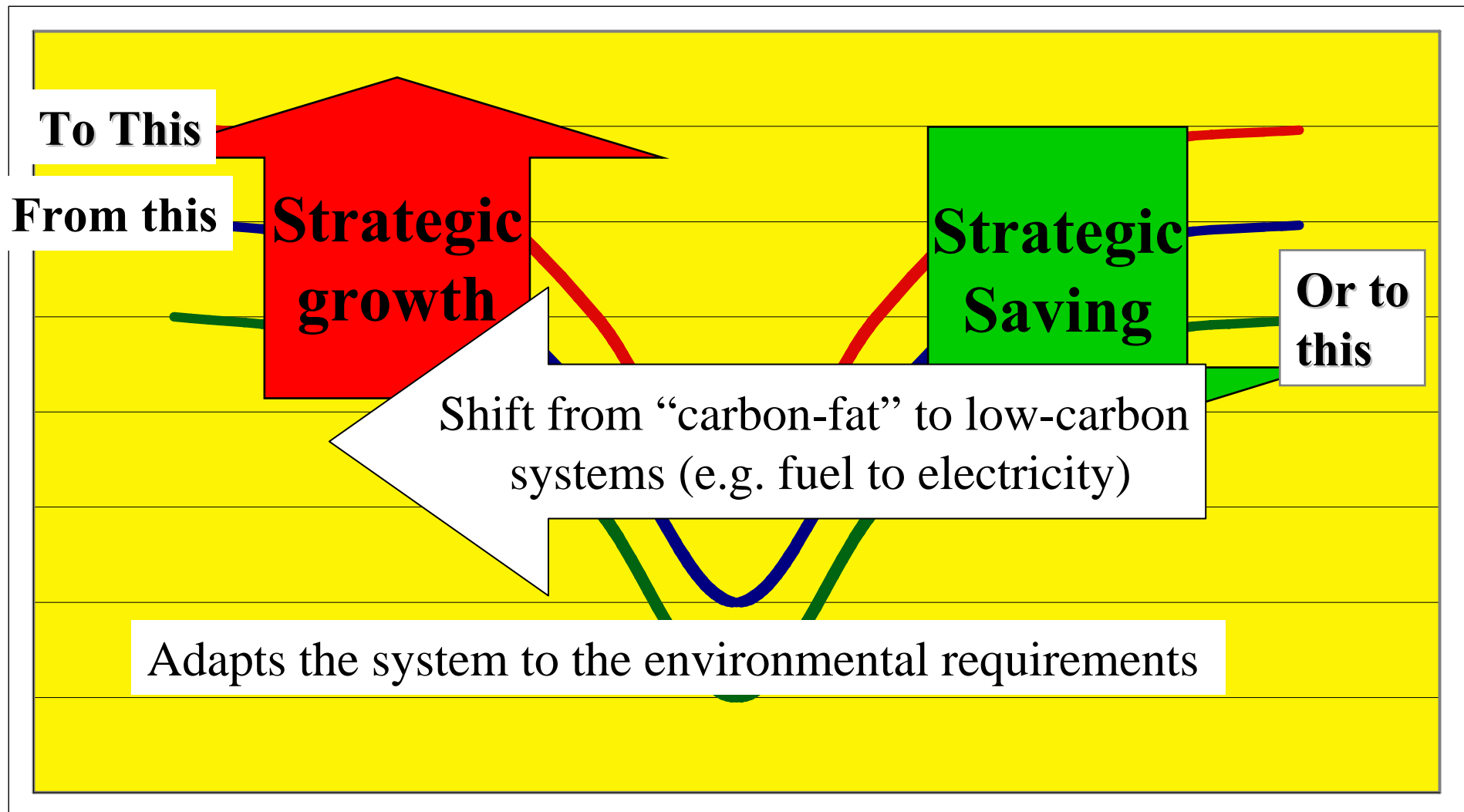
# ...will deliver

- **Less Price Volatility** by improving short term price elasticity
- Improved **System Reliability** by reducing peaks and adding to safety margins
- Enhanced **System security** by reducing dependency on vulnerable supply resources
- Improved **Restoration capacity** by dispatching in/after emergency situations
- **Less costly network reinforcements** since energy efficiency measures will be active alternatives
- **Distributed generation** as alternative to transmission lines.
- Improved **operation and use of flowing renewable sources**
- **Elastic response** as complement to competition (lack in number of companies and excess in market concentration)

# Technologies and issues for Load Shape DSM

- Metering,
- Control and Communications
- Dynamic Demand Changes to offset Renewable Generation Intermittency
- Modelling and Forecasting
- Market Design
- Storage
- Behavioural aspects

# DSM can change the LOAD LEVEL



# The DSM work on LOAD LEVEL

## FINALISED

- III. Cooperative Procurement
- IV. Methods for Integrated Resource Planning
- V. Implementation of DSM in the Market Place
- VI. DSM in a changing Electricity Business environment
- VII. Market Transformation
- IX. The role of municipalities in a liberalised system
- X. Performance Contracting (ESCO)

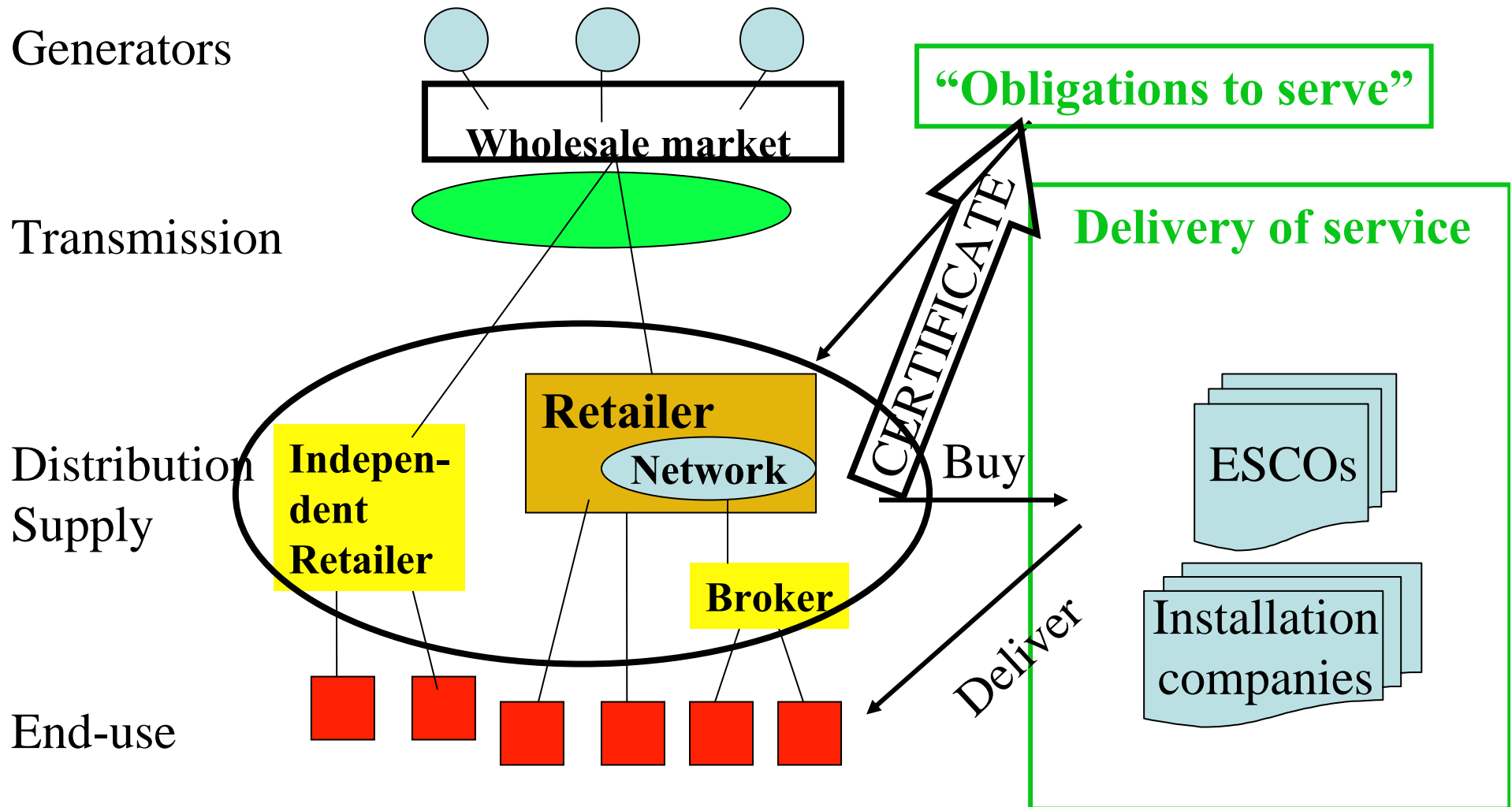
## ACTIVE

- **I. Database on DSM (INDEEP) + Evaluation Handbook for Kyoto-related projects**
- **XII. Standards and labels (Pending)**
- **XIV. White Certificates**

## IN PREPARATION and DISCUSSED

- **Advanced lighting programmes**
- **Up-dating and development of INDEEP (I)**
- **Joint Procurements (III)**
- **Up-dating and development of ESCO-work (incl. projects) (X)**
- **Positive incentives (a look on behavioural aspects)**

# Creating a certificates market (Commitments)





# DSM Policy for load level

- Countries should have a system for assessment of the least-cost delivery of energy services, that includes both the demand and supply side, and allows a judgement on divergence from possible sustainable paths
- Based on this it should be decided how market actors should be engaged in delivery of the services

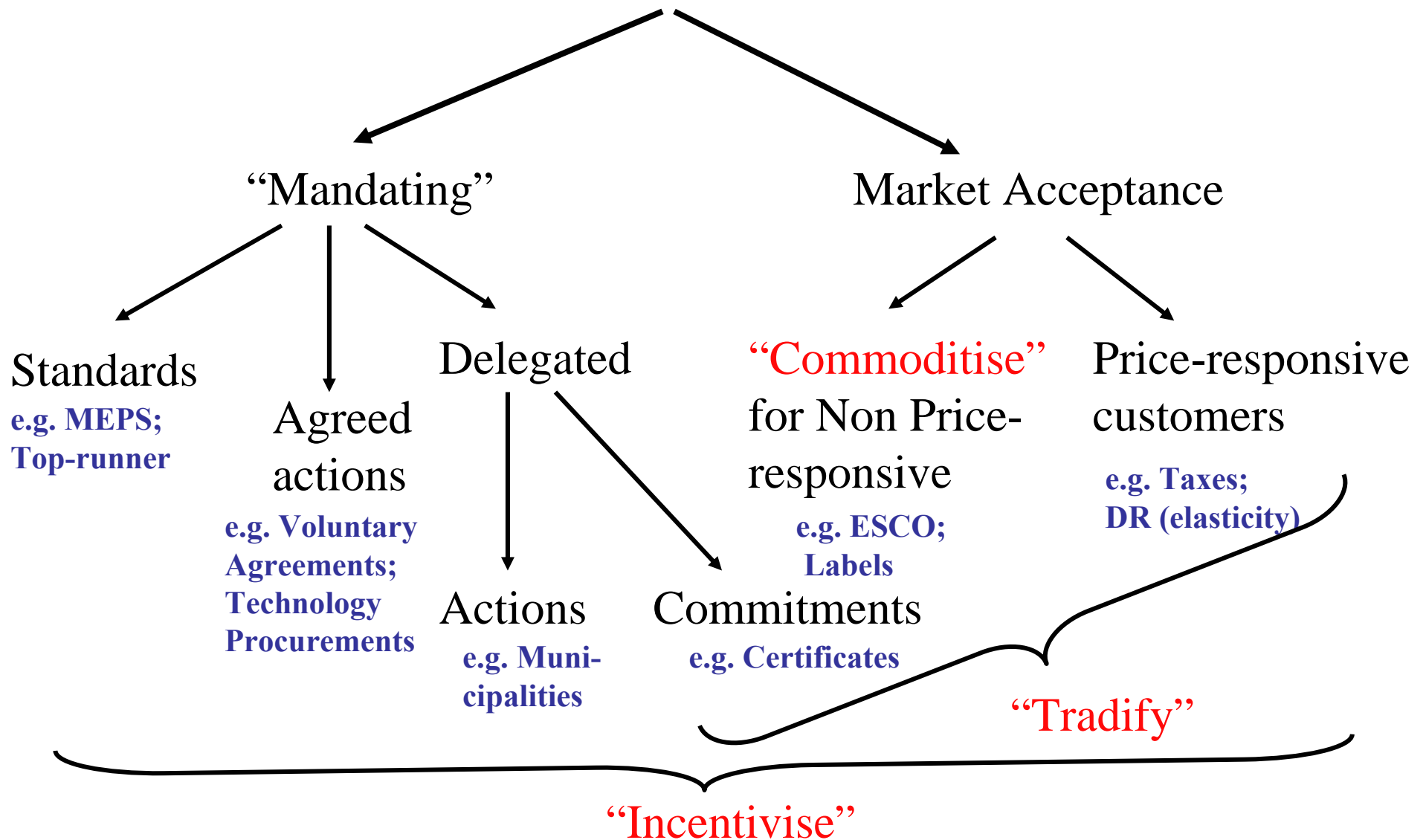
# ...will deliver

- Development of **markets for energy service companies** and performance contracting
- **Allocation of commitments and obligations** that mobilises the better set of actors for large scale energy efficiency actions, e.g. use of “White Certificates, Public sector procurement, municipality initiatives, etc
- **Organisation and targeting of support programmes** for energy efficient products
- Improved allocation of **obligations for reduction of GHG-emissions** between sectors and countries
- Improved use of **market communication mechanisms**, e.g. standards and labels
- The assessment should also give input to how further **research and support** mechanisms should be distributed among actors.

# Technologies and issues for Load Level DSM

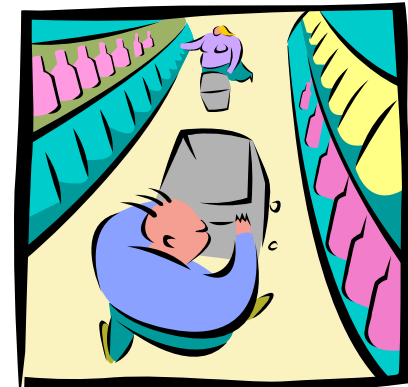
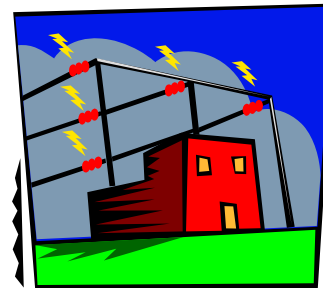
- Appliances
- Lighting
- Building performances
- Systems configuration, e.g. Distributed generation
- Delivery mechanisms, e.g. ESCO
- Programmes for delivery
- Incentives “co-existence” and policy packages

# LARGE-SCALE ENERGY EFFICIENCY



# New concerns on the agenda

- **Environment and Climate** (codified in the Kyoto-Agreement)
- **Governance** (*who has the responsibility?*)
- Can we **make business** out of these concerns? (*ESCOs, emissions trading*)
- **Systems reliability** (*e.g. black outs*)
- **Customer market role** (*price taker or player*)



# The DSM work has several nodes

- DSM Centre of Excellence (for dissemination, training and projects)
- “Certification” of DSM professionals
- Publishing “State of DSM in the world”
- Co-operation with CTI on training
- Co-operation with REEEP on projects
- Co-operation with specialist organisations (e.g. CIGRE)
- And why not APEC?

# Suggestions for events

(using the IEA convening power)

- 1. Market Re-design Options** (Demand Response, Certificates opportunities)
- 2. Models and initiatives for boosting technologies** (Aggregated Procurements, Dynamic top-focused standards, Clearinghouses for programmes and projects e.g. CDM/JI related)
- 3. Networking and initiatives to reinforce services and promotions** (ESCOs, Marketing, Municipality involvement)
- 4. Lighting development** (our new task possibly together with ECBCS and the secretariat)
- 5. Tailoring Programmes and Measures** (our new Handbook and databases from Annex I)

Is sustainable growth possible...



..without DSM?



<http://dsm.iea.org>

